

P138

## P138 -Management of Severe Hyperkalaemia in adults.

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### Background:

Hyperkalaemia is a common electrolyte disorder that can pose serious and potentially life-threatening consequences, such as ventricular arrhythmias, cardiac arrest, and increased mortality. The documented incidence of hyperkalemia is between 1 and 10% in hospitalized patients<sup>1</sup>. There was a significant concern raised by NHS Improvement in August 2018 emphasizing the importance of safe and timely management of hyperkalemia following observation of hyperkalemia related cardiac arrest in 35 patients over a three-year period<sup>2</sup>.

### Objectives:

The aim of this project is to compare our current practice in the management of severe hyperkalemia (serum potassium  $\geq 6.5$  mmol/l) against the standards recommended in UK Renal Associations guidelines. The additional data were also collected to understand the routine use of additional anti-hyperkalaemia treatment (resins, sodium bicarbonate), adverse events related to treatment and to establish the relationship between reduced renal function and the incidence of hyperkalaemia.

### Method:

- A retrospective audit looking at patients aged over 16 presented with severe hyperkalaemia on admission and/or during hospitalization from April 2017 to May 2018.
- Patients already on renal replacement therapy (RRT) were excluded.
- Data were collected from patients' case notes using a data collection pro forma and were analyzed using Microsoft Excel.
- Total of 71 patients was included in the audit (n =71). Male 34 34 patients and female 37 patients. The median age was 77 with the range from 30 to 95 years.

### Results:

First of all, the proportion of patients who had an ECG performed before treatment was only 85 %. Of these patients, 17% received repeat ECG's after treatment and 8% had continuous ECG monitoring.

Secondly, out of the 71 patients included in this audit, 86% of patients with severe hyperkalaemia received an insulin-glucose infusion. 70% of patients received IV calcium gluconate therapy, and 24 % were treated with nebulized salbutamol as an adjuvant to IV insulin therapy. In addition, 15%, 4% and 1% of patients received sodium bicarbonate, resins, and hemodialysis treatment respectively.

Thirdly, 20% of patients had their blood glucose monitored post insulin therapy and 56% of patients had repeat potassium levels after treatment. Five patients required ITU admission for monitoring and treatment. Six patients died during hospitalization, four of which had a cardiac arrest. No treatment-related adverse events were recorded.

Finally, our findings suggested that there is a positive correlation between the prevalence of severe hyperkalemia and chronic kidney disease (CKD) ( Table 1).

### Conclusion and Recommendations:

- Review of our initial audit data revealed that the current practice in the treatment of severe hyperkalemia varied among health care professionals of different grades and specialties.
- Further work is needed in improving inpatient management of hyperkalemia. A variety of interventions need to be implemented, such as trust-wide educational sessions for doctors and nursing staff, an update of the local guidance aligned with evidence-based recommendations, and the application of easy to follow care-bundles to ensure high-quality care is provided consistently.